5-8-07

MAY 07 2007 OIPE PATENT & TRADEMARK OFFICE

A-F

TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Application Number	10/004,097
Filing Date	October 31, 2001
First Named Inventor	Jakobik et al
Art Unit	2613
Examiner Name	David J. Lee
Attorney Docket Number	2676-000008
Total Number of Pages in This Submission	15

ENCLOSURES *(check all that apply)*

- ☐ Fee Transmittal Form
  - ☐ Fee Attached
- ☐ Amendment / Reply
  - ☐ After Final
  - ☐ Affidavits/declaration(s)
- ☐ Extension of Time Request
- ☐ Express Abandonment Request
- ☐ Information Disclosure Statement
- ☐ Certified Copy of Priority Document(s)
- ☐ Response to Missing Parts/ Incomplete Application
  - ☐ Response to Missing Parts under 37 CFR 1.52 or 1.53
- ☐ Drawing(s)
- ☐ Licensing-related Papers
- ☐ Petition
- ☐ Petition to Convert to a Provisional Application
- ☐ Power of Attorney, Revocation Change of Correspondence Address
- ☐ Terminal Disclaimer
- ☐ Request for Refund
- ☐ CD, Number of CD(s) _____
- ☐ After Allowance Communication to Technology Center (TC)
- ☐ Appeal Communication to Board of Appeals and Interferences
- ☒ Appeal Communication to TC (**Appeal Notice, Brief, Reply Brief**)
- ☐ Proprietary Information
- ☐ Status Letter
- ☒ Other Enclosure(s) *(please identify below)*:

  Return Postcard

Remarks The Commissioner is hereby authorized to charge any additional fees that may be required under 37 CFR 1.16 or 1.17 to Deposit Account No. 08-0750. A duplicate copy of this sheet is enclosed.

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm *or* Individual name	Harness, Dickey & Pierce, P.L.C.	Attorney Name Timothy D. MacIntyre	Reg. No. 42,824
Signature	T. MacIntyre		
Date	May 7, 2007		

CERTIFICATE OF TRANSMISSION/MAILING

I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below.

Typed or printed name	Mary Ellen Donovan	Express Mail Label No.	EV 522 877 840 US (5/7/2007)
Signature	Mary Ellen Donovan	Date	May 7, 2007

EV 522 877 840 US

Attorney Docket No. 2676-000008

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Group Art Unit:	2613	
Examiner:	David Lee	**Corrected Appeal Brief**
Applicants:	Jakobik et al	
Serial No.:	10/004,097	
Filed:	October 31, 2001	
Title:	Architectural Arrangement for Core Optical Networks	

BRIEF ON BEHALF OF APPELLANTS

This is a corrected appeal brief in accordance with the Notification of Non-Compliant Appeal Brief and in connection with an appeal from the action of the Examiner dated October 5, 2005, finally rejecting Claims 1, 3-9 and 11 of the present application. Copies of the appealed claims are attached as an appendix.

I. Real Party In Interest

The real party in interest in the present application is PTS Corporation who is the current assignee of the application.

II. Related Appeals and Interferences

There are no known related appeals or interferences which will directly affect, be directly affected by, or otherwise have a bearing on the Board's decision in the pending appeal.

III. Status Of The Claims

Claims 1, 3-9, 11-13 and 15 are pending in the present application. Although an Advisory Action recently received indicates that all of these claims are rejected, applicant assumes that only Claims 1, 3-9 and 11 stand rejected and Claims 12, 13 and 15 remain allowed as indicated in the Office Action mailed October 5, 2005. Claims 8 and 32 were previously cancelled from the application.

IV. Status Of Amendments

Applicant's response after final rejection did not propose any amendments to the pending claims. Therefore, Claims 1, 3-9 and 11 stand as presented in the attached appendix.

V. Summary of the Claimed Subject Matter

Applicant's invention is directed generally to an architectural arrangement that enables optical switching at different optical layers within an optical transport network. To enable switching, signal impairment compensation is performed at each layer of the network. For instance, dispersion compensation is applied at each layer to equalize signal impairment levels. Gain flattening and optical transient suppression are also applied at each layer. In addition, these techniques must be applied to each optical signal within a given layer to achieve the signal power needed to traverse long distances.

In Claim 1, the architectural arrangement 30 includes: an optical transport line residing in an optical transport network; a multiplexing component connected to the optical transport line; and a plurality of signal impairment compensation mechanisms associated with the multiplexing component. The optical transport line is operable to carry the optical system signal 29 which is constituted in a layered membership relationship that defines at least two optical layers 12, 14, 16, 18, 20. The multiplexing component receives a plurality of optical data signals 22 therein, combine the plurality of optical data signals 22 to form the optical system signal 29, and launches the optical system signal into the optical transport line. As shown in Figure 2, the plurality of signal impairment compensation mechanisms 32 are operable across each of the optical layers of the optical system signal 29 to perform a signal impairment compensation operation on each of the optical signals therein, where the signal impairment compensation operation includes dynamic gain flattening, optical transient suppression and dispersion compensation. Basis for this claim is found throughout the application as originally filed, including on pages 5 and 6 of the specification.

Claim 5 of the application is directed to a method for transporting optical signal in an optical transport network. With reference to Figure 2, signal impairment compensation is performed on a plurality of optical data signals 22 of a multiplexing component. The plurality of optical data signals are selectively combined into a plurality of intermediate optical signals (e.g., 24, 26, or 28). Likewise, signal impairment compensation is performed on each of the plurality of intermediate optical signals. Signal impairment compensation operations include dynamic gain flattening, optical transient suppression and dispersion compensation. Lastly, intermediate optical signal are combined to form an optical system signal 29 which is launched into the optical transport network. Basis for this claim is found throughout the application as originally filed, including on pages 5 and 6 of the specification.

VI. Grounds of Rejection to be Reviewed on Appeal

I. Whether Claims 1, 3-5 and 11 are unpatentable over U.S. Patent No. 6,738,181 (Nakamoto) in view of admitted prior art under 35 U.S.C. §102(b)?

VII. Arguments

I. Rejection of Claims 1, 3-5 and 11 as being unpatentable over U.S. Patent No. 6,738,181 (Nakamoto) in view of admitted prior art.

Nakamoto is directed generally to a polarization crossing method for generating wavelength-division multiplexing optical signals. First, the Examiner asserts that Nakamoto discloses performing impairment compensation of each of the data signals

(referring to 142-1 to 141-15). However, since Claim 1 of the present application defines the signal impairment compensation operation to include dynamic gain flattening, optical transient suppression and dispersion compensation, amplification is not a form of impairment compensation as recited in Applicant's claimed invention. Standing alone this distinction may not seem significant, but it contributes to the overall deficiency of the reference. In this case, Nakamoto fails to disclose a signal impairment compensation operation on each data signal at the lowest level of the hierarchy as recited in the Applicant's claimed invention.

Moreover, Nakamoto fails to teach or suggest performing signal impairment compensation on each of the optical signals within a given layer as recited in Applicant's claimed invention. With reference to col. 19, lines 63-67 of Nakamoto, dispersion compensation values for compensating data signals 141-1 and 141-2 are computed using the data signal 141-3 as the reference. In other words, no dispersion compensation is performed on data signal 141-3. In fact, performing dispersion compensation on this data signal will adversely effect polarization crossing objectives. Rather than eliminate negative dispersion effects as asserted by the Examiner, performing a signal impairment compensation of this signal may cause it to interact with adjacent signals. Thus, Nakamoto *teaches away* from performing dispersion compensation on each of the data signals at this layer.

Likewise, no dispersion compensation is applied to the sub-band signals being output from multiplexer 144-2 and 144-4. Again, performing dispersion compensation on these data signals will adversely affect the polarization crossing objectives of Nakamoto reference. Therefore, from the teachings of the Nakamoto reference, one of ordinary skill

would <u>not</u> have been motivated to provide dispersion compensation to <u>each</u> signal of a given optical layer. It is further understood that Nakamoto does not contemplate switching of optical signals at any of the intermediate layers. For this additional reason, one of ordinary skill would not have been motivated to provide dispersion compensation to each signal of each optical layer as recited in Applicant's claimed invention.

The Examiner also concedes that Nakamoto does not disclose performing dynamic gain flattening or optical transient suppression on each of the optical signals at each of the optical layers within the network as recited in Applicant's claimed invention. The Examiner relies in part upon Applicant's characterization of the prior art. Although the Applicant acknowledges that techniques for applying dynamic gain flattening and optical transient suppression are known, there is no characterization of the prior art that indicates whether these techniques are applied to all of the optical signals at a given layer nor as to which optical layers these techniques might be applied. Absent this teaching, it is unclear how this combination of references teaches performing dynamic gain flattening or optical transient suppression on each of the optical signals at each of the optical layers as recited in Applicant's claimed invention. In this instance, the Examiner appears to be relying upon hindsight reasoning given the benefit of present application.

In contrast, Applicant's invention is directed to an architectural arrangement that enables optical switching at different optical layers within an optical transport network. To enable switching, signal impairment compensation is performed at each layer of the network. For instance, dispersion compensation is applied at each layer to equalize signal impairment levels. Gain flattening and optical transient suppression are also applied at each layer. In addition, these techniques must be applied to <u>each</u> optical

signal within a given layer to achieve the signal power needed to traverse long distances. Since the currently rejected claims recite this aspect of the present invention, it is respectfully submitted that Applicant's invention defines patentable subject matter over Nakamoto. Accordingly, applicants respectfully request the Board to reconsider and withdraw this rejection.

For the foregoing reasons, the appealed claims are patentably distinguishable over the art relied upon by the Examiner. Accordingly, Applicant's representative respectfully requests that this Board reverse the final rejection of Claims 1-7, 9-31 and 33-36.

Respectfully submitted,

Timothy D. MacIntyre
Registration No. 42,824

Dated: May 7, 2007

HARNESS, DICKEY & PIERCE
P.O.Box 828
Troy, Michigan 48303
(248) 641-1600

TDM/med

Claims Appendix

1. (previously presented) An architectural arrangement for launching an optical system signal into an optical transport network, the optical system signal being constituted in a layered membership relationship that defines at least two optical layers, comprising:

an optical transport line residing in the optical transport network and operable to carry the optical system signal therein;

a multiplexing component connected to the optical transport line, the multiplexing component operable to receive a plurality of optical data signals therein, combine the plurality of optical data signals to form the optical system signal, and launch the optical system signal into the optical transport line; and

a plurality of signal impairment compensation mechanisms associated with the multiplexing component, the plurality of signal impairment compensation mechanisms operable across each of the optical layers of the optical system signal to perform a signal impairment compensation operation on each of the optical signals therein, where the signal impairment compensation operation includes dynamic gain flattening, optical transient suppression and dispersion compensation.

3. (original) The architectural arrangement of Claim 1 wherein the multiplexing component further comprises a set of multiplexers operable to receive the plurality of optical data signals and combine the plurality of optical data signals to form a

plurality of intermediate optical signals, and a system level multiplexer operable to receive the plurality of intermediate optical signals and combine the plurality of intermediate optical signals to form the optical system signal.

4. (original) The architectural arrangement of Claim 3 wherein at least one signal impairment compensation mechanism is positioned at one or more inputs associated with the set of multiplexers, at one or more inputs to the system level multiplexer, and at an output of the system level multiplexer.

5. (previously presented) A method for transporting optical signals in an optical transport network, comprising:

receiving a plurality of optical data signals;

performing signal impairment compensation on each of the plurality of optical data signals, where the signal impairment compensation includes dynamic gain flattening, optical transient suppression and dispersion compensation;

selectively combining the plurality of optical data signals to form a plurality of intermediate optical signals;

performing signal impairment compensation on each of the plurality of intermediate optical signals, where the signal impairment compensation includes dynamic gain flattening, optical transient suppression and dispersion compensation;

combining the plurality of intermediate optical signals to form an optical system signal; and

launching the optical system signal into the optical transport network.

6. (original) The method of Claim 5 further comprising the steps of:

separating the optical system signal into the plurality of intermediate optical signals at a network switching site associated with the optical transport network, the network switching site interconnecting a plurality of optical transport lines; and

routing at least one of the plurality of intermediate optical signals to one of the plurality of optical transport lines.

7. (original) The method of Claim 6 wherein the step of routing at least one of the plurality of intermediate optical signals further comprises using an optical switch residing at the network switching site.

8. (original) The method of Claim 6 wherein the step of routing at least one of the plurality of intermediate optical signals further comprises manually routing the at least one intermediate optical signal without the use of a switch to a multiplexer residing at the network switching site.

9. (original) The method of Claim 6 further comprising the steps of:

separating remaining intermediate optical signals into a plurality of remaining optical data signals;

routing the plurality of remaining optical data signals to a plurality of optical switches residing at the network switching site.

11. (original) The method of Claim 5 wherein the step of launching the optical system signal further comprises performing signal impairment compensation on the optical system signal.

Evidence Appendix

None

Related Proceedings Appendix

None